

1 KEKER & VAN NEST LLP
ROBERT A. VAN NEST - # 84065
2 rvannest@kvn.com
CHRISTA M. ANDERSON - # 184325
3 canderson@kvn.com
DANIEL PURCELL - # 191424
4 dpurcell@kvn.com
633 Battery Street
5 San Francisco, CA 94111-1809
Telephone: (415) 391-5400
6 Facsimile: (415) 397-7188

7 KING & SPALDING LLP
BRUCE W. BABER (pro hac vice)
8 bbaber@kslaw.com
1185 Avenue of the Americas
9 New York, NY 10036
Telephone: (212) 556-2100
10 Facsimile: (212) 556-2222

11 Attorneys for Defendant
GOOGLE INC.

12 UNITED STATES DISTRICT COURT
13 NORTHERN DISTRICT OF CALIFORNIA
14 SAN FRANCISCO DIVISION

15 ORACLE AMERICA, INC.,
16 Plaintiffs,
17 v.
18 GOOGLE INC.,
19 Defendant.

Case No. 3:10-cv-03561 WHA

**GOOGLE INC.'S OPPOSITION TO
ORACLE'S MOTION IN LIMINE #4
REGARDING GOOGLE'S DAMAGES
EXPERT, DR. GREGORY LEONARD**

Hearing: April 27, 2016
Time: 8:00 a.m.
Dept. Courtroom 8, 19th Fl.
Judge: Hon. William Alsup

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I. INTRODUCTION

It is plain from Oracle's motion to exclude the testimony of Google's damages expert Dr. Gregory Leonard that Oracle would have sought to exclude any damages calculation Google offered, no matter what. Oracle's demand for \$8.8 billion of Google profits purportedly related to the Android platform depends on a far-fetched theory that is contradicted by all market facts: that by using the structure, sequence, and organization of and declaring code from 37 Java SE API packages ("declarations/SSO"), Google persuaded Java application developers to create apps for Android, which in turn attracted users to the platform. In reality, things worked exactly the opposite: far from flocking to Android because of the declarations/SSO, developers waited until Android had demonstrated a substantial and growing user base before committing to develop apps for the platform. Oracle has no evidence of causation to support its disgorgement theory.

Nevertheless, in an effort to test Oracle's theory, Dr. Leonard offered several approaches. As required by 17 U.S.C. § 504(b) and the Ninth Circuit, Dr. Leonard examined the "causal nexus" between the alleged infringement and any Android-related revenues, and then analyzed whether any of the profits Oracle seeks are attributable to the alleged infringement or to other factors, an analysis not performed by Oracle's damages expert. *Polar Bear Prods., Inc. v. Timex Corp.*, 384 F.3d 700, 7011 (9th Cir. 2004). Contrary to Oracle's claim, the Ninth Circuit does not require any particular method of apportionment or "mathematical exactness," but rather a "reasonable and just apportionment" based on evidence supporting a rational division of profits. *See Cream Records, Inc. v. Jos. Schlitz Brewing Co.*, 754 F.2d 826, 828-29 (9th Cir. 1985); *Abend v. MCA, Inc.*, 863 F.2d 1465, 1480 (9th Cir. 1988). While Dr. Leonard conducted that causal analysis, Oracle's expert did not.

First, relying on Google's technical experts and economic evidence, Dr. Leonard opined that the declarations/SSO were no more important to Android than the other valuable elements of Android. This is Dr. Leonard's "lines of code" analysis, which apportions the value of allegedly infringing code compared to the value of all code in the Android platform and the Google advertising code base. Second, he assumed that Oracle's counterfactual theory is right, that the declarations/SSO did attract developers and increase the number of apps available on Android,

1 and calculated the market share Google would have lost had those Android apps never been
 2 developed. This is Dr. Leonard's "share loss" analysis, which meets Oracle's theory head-on and
 3 apportions the profits generated by the additional apps supposedly enabled by the alleged
 4 infringement based on actual market evidence. Oracle moves to strike both analyses, arguing that
 5 the first analysis is too simplistic and the second too complicated. Oracle's own expert says it is
 6 impossible to apportion the contribution of all the valuable elements of Android (even though he
 7 admits there are many), and thus, Oracle is entitled to the all profits attributable to Android.

8 Oracle's arguments in its motion to strike are meritless. Oracle mischaracterizes both the
 9 governing case law and the analysis Dr. Leonard performed. First, Oracle claims that Dr. Leonard
 10 used "noninfringing alternatives" in four of his apportionment analyses in an attempt to shoehorn
 11 them into the scope of a prior order of this Court. But consideration of a "but for" or
 12 "counterfactual" world to assess the extent of profits attributable to a particular, allegedly
 13 infringing element of a product is both economically sound and legally well-established, and Dr.
 14 Leonard's analysis provides exactly what this Court ruled was missing from the earlier expert
 15 analysis. Second, Dr. Leonard's "lines of code" approach is consistent with governing Ninth
 16 Circuit law. Third, Oracle incorrectly claims that Dr. Leonard double-counts Google's Traffic
 17 Acquisition Costs based on a mischaracterization of Google deposition testimony and a
 18 nonsensical interpretation of Google business records.

19 **II. ARGUMENT**

20 **A. Section 504(b) requires consideration of "but for" analyses to determine** 21 **whether profits are "attributable" to the alleged infringement.**

22 The copyright damages statute, 17 U.S.C. § 504(b), sets forth a "rule of causation."
 23 *Walker v. Forbes Inc.*, 28 F.3d 409, 416 (4th Cir. 1994); *see also Polar Bear*, 384 F.3d at 708
 24 (plaintiff must establish the "causal connection" which is "akin to tort principles of causation");
 25 *Mackie v. Rieser*, 296 F.3d 909, 915 (9th Cir. 2002) (discussing that "rudimentary principles of
 26 tort law" require application of "the principle of causation based on non-speculative evidence").
 27 That rule of causation "creates a two-step framework for recovery of indirect profits: 1) the
 28 copyright claimant must first show a causal nexus between the infringement and the gross

1 revenue; and 2) once the causal nexus is shown, the infringer bears the burden of apportioning the
 2 profits that were not the result of infringement.” *Polar Bear*, 384 F.3d at 711. “[D]efendant’s
 3 burden under the apportionment provision of Section 504(b) is primarily to demonstrate the
 4 absence of a causal link between the infringement and all or part of the profits claimed by the
 5 plaintiff.” *Data General Corp. v. Grumman Systems Support Corp.*, 36 F.3d 1147, 1175 (1st Cir.
 6 1994); *see also Mackie*, 296 F.3d at 914 (“a copyright holder must establish the existence of a
 7 causal link before indirect profits damages can be recovered.”).

8 Both Dr. Leonard and the Court’s Rule 706 expert, Dr. Kearl, who are Ph.D. economists
 9 with experience in valuing intellectual property, opined that the most economically sound way to
 10 determine causation—whether the causal nexus to profits or profits attributable to infringement—
 11 is to analyze how things would have differed but-for the alleged infringement. ECF 1563-7
 12 (Leonard Rpt. ¶¶18-23); ECF 1583-6 (Kearl Rpt. ¶8). After opining that “[c]onsideration of non-
 13 infringing alternatives in a disgorgement analysis makes economic sense,” Dr. Kearl further
 14 commented that “there does not appear to be a clear distinction between considering non-
 15 infringing alternatives and [Oracle’s expert’s approach of] apportioning wrongful profits based on
 16 relative value of the copyrighted material to the overall work.” ECF 1583-6 (Kearl Rpt. ¶¶ 8, 16-
 17 17). This “counterfactual” approach to causation is well-supported in the economics and damages
 18 literature. *See, e.g.,* Decl. of Mullen to MIL Opps. (“Mullen Decl”), Ex. 20 at 184. As explained
 19 by one treatise, “[a] second accepted method [for calculating copyright damages], focusing on the
 20 ‘infringer’s profits,’ similarly requires the court to explore circumstances that are counterfactual.
 21 The owner’s entitlement to the infringer’s profits is limited to the profits ‘attributable to the
 22 infringement’ – 17 U.S.C. § 504(b). The court, therefore, must compare the defendant’s actual
 23 profits to what they would have been without the infringement.” Mullen Decl., Ex 21 at 740-41.¹

24 ¹ Oracle argues that two virtually identical articles by Dr. Leonard contradict this basic tenet of
 25 causation/damages analysis. But both articles endorse using non-infringing alternatives as the
 26 basis for the “but for” world (counterfactual world) in assessing patent damages. G. Leonard et
 27 al., *Patent Damages and Real Options: How Judicial Characterization of Noninfringing*
 28 *Alternatives Reduces Incentives to Innovate*, 22 Berkeley Tech. L. J. 825, 832 & 835(2007) (“An
 important consideration is whether there exist any non-infringing ‘design arounds’ and the costs
 of implementing and using these design-arounds as compared to using the patented technology,”
 (reasonable royalty); “two situations do exist where it may be reasonable to assume the use of an
 alternative non-infringing technology in the but-for world...the infringer may claim that in the

Building on this basic economic logic, courts routinely consider evidence concerning whether a defendant would have earned those profits “but for” the infringement, and often consider a defendant’s “next best” or “non-infringing alternative,” as part of the section 504(b) causal analysis. *See Data General*, 36 F.3d at 1175 (to attack causation under section 504(b) “the defendant can attempt to show that consumers would have purchased its product even without the infringing element”); *Bucklew v. Hawkins, Ash, Baptie & Co., LLP*, 329 F.3d 923, 931-32 (7th Cir. 2003) (defendant’s ability to design its own non-infringing program was relevant to show “infringer’s profits that are due to those features of his work that do not infringe; those profits belong to the infringer.”); *Walker*, 29 F.3d at 411 (defendant introduced testimony that the magazine article easily could have run without the infringing photograph); *Complex Systems, Inc. v. ABN Ambro Bank N.V.*, No. 08 Civ. 7497 (KBF), 2013 WL 5970065, *11 (S.D.N.Y. Nov. 8, 2013) (profits not specifically attributable to infringing software when there were many trade processing software companies that provided the same basic functionality); *Smerdijian v. Littell*, 641 F. Supp. 2d 233, 243 (S.D.N.Y. 2009) (defendant’s expert testimony that “there exist a large number of copyrighted images that are close substitutes for each other such that a given image, which is such a small portion of a whole textbook, is unlikely to increase demand for the textbook and therefore unlikely to cause profits to accrue to the publisher” was relevant to plaintiff’s recovery of defendant’s profits under § 504(b)).

In cases where (as here) causation is highly attenuated, this is the most (or only) sensible way to analyze the contribution to profits of one small, allegedly infringing, piece of a complex product. In fact, despite Oracle’s protests (ECF 1554-4 (Oracle MIL 4 at 4 n.4)), Oracle’s own expert, James Malackowski, also bases both his causal nexus and his supposed apportionment analysis on an “embedded” counterfactual analysis—the assumption that Android would not exist

but-for world it would have adopted the same technology used in an existing non-infringing product,” (lost profits)); G. Leonard et al., *Real Options and Patent Damages: The Legal Treatment of Non-Infringing Alternatives, and Incentives to Innovate*, 20 Journal of Economic Surveys 493, 5, 8(2006). Oracle instead cites to a criticism of the *Grain Processing* decision’s use of ***an expanded range of NIAs*** not actually available to the infringer, but these articles in no way argue ***against the use of NIAs generally***. To the extent Oracle disagrees, this is quintessential material for cross-examination.

1 *at all* “but for” Google’s use of the declarations/SSO of 37 Java SE APIs. Mullen Decl., Ex. 22
 2 (Kearl Dep. at 178:8-18); *see also* ECF 1563-7 (Leonard Rpt. ¶¶21-23). Indeed, the foundation of
 3 Mr. Malackowski’s disgorgement analysis is his assumption that “there were no commercially
 4 acceptable alternatives available to Google...other than to utilize the Infringed Java Copyrights as
 5 it did.” ECF 1560-12 (Malackowski Rpt. ¶232). According to Mr. Malackowski, this establishes a
 6 causal nexus between \$40.6 billion in Android-related revenues and Android’s use of the
 7 declarations/SSO of the 37 Java SE APIs and entitles Oracle to *all of the profits* for hardware,
 8 digital content and apps, and 35.6 percent of Android-related search and advertising profits. *Id.*
 9 ¶¶18, 232, 219-281; ECF 1560-13 (Malackowski Reply ¶¶272-285). This is despite his
 10 unequivocal admissions that the other 99% of technology in the Android operating system, as
 11 well as Google’s business strategy and efforts, contributed to those very same profits. ECF 1560-
 12 3 (Malackowski Dep. at 218:24-220:19; 220:22-223:1; 224:16-225:11; 225:17-228:1; 230:2-13).
 13 Mr. Malackowski also offers this extreme counterfactual despite acknowledging that, even
 14 without the declarations/SSO, Google would have gotten some form of Android to market. ECF
 15 1583-8 (Malackowski Dep. at 377:20-378:1).

16 In the face of this legal authority, economic logic, and the work of its own expert, Oracle
 17 seeks to exclude any opinions by Dr. Leonard that rely on counterfactual analyses. Oracle offers
 18 an interpretation of *Frank Music Corp. v. MGM, Inc.*, 772 F.2d 505 (9th Cir. 1985) that borders
 19 on the frivolous, claiming it “held...that NIAs have no probative value in disgorgement.” ECF
 20 1554-4 (Oracle MIL 4 at 2:16-18). It did not so hold. There, the Ninth Circuit reversed the district
 21 court’s apportionment because it did not provide “any reasoned explanation of or formula for its
 22 apportionment.” *Id.* at 518. In seeking to defend the lower court’s apportionment, the defendant
 23 argued that the show’s continued success after the plaintiff’s infringing music was omitted proved
 24 its relative unimportance. The Ninth Circuit rejected that argument, crediting other evidence such
 25 as defendant’s own testimony, that the music was a very important part of the show, and therefore
 26 remanding to the trial court for a full explanation of its reasons and method of apportionment. *Id.*
 27 at 518-19. That in no way establishes, or even suggests, a general rule barring the use of non-
 28 infringing alternatives from disgorgement analyses under copyright law.

Indeed, Oracle's own cited cases *endorse* consideration of non-infringing alternatives. For example, in *Brocade Comm'ns Systems Inc. v. A10 Networks, Inc.*, No. C 10-3428, 2013 WL 831528 (N.D. Cal. Jan. 10, 2013), Judge Grewal admitted testimony and expert opinion of non-infringing alternatives as relevant to both the causal nexus and apportionment determinations under section 504(b). Defendant offered evidence that it had "created and implemented non-infringing work around code" in support of its argument that plaintiff had not shown a causal nexus to sales of the product. *Id.* at *6. Additionally, defendant's expert testified at trial regarding a non-infringing alternative-based method of measuring apportionment – that plaintiff should "properly collect only the amount A10 saved by coping the code instead of generating the code on its own." *Id.* at *7. Although Judge Grewal found substantial evidence to uphold the jury verdict awarding disgorged direct (not indirect) profits, the defendant presented evidence of non-infringing alternatives and the court nowhere criticized its relevance.²

Not only has the Ninth Circuit never adopted a categorical rule excluding evidence of a counterfactual, such a rule would be irreconcilable with its oft-repeated refusal to require a specific method of apportionment, only a "reasonable and just apportionment" based on evidence supporting a rational division of profits. *Cream Records*, 754 F.2d at 828-29 ("In cases such as this where an infringer's profits are not entirely due to the infringement, and the evidence suggests some division which may rationally be used as a springboard it is the duty of the court to make some apportionment.") (citation omitted); *see also Frank Music*, 772 F.2d at 518 ("The district

² Oracle also cites *Computer Associates, Inc. v. Altai*, 775 F. Supp. 544, 552 (E.D.N.Y. 1991) but fails to mention that the *Altai* district court specifically rejected plaintiff's expert opinion for failing to consider NIAs. In the context of actual damages, the court rejected plaintiff's expert's opinion because of his "basic assumption that but-for the infringement, [defendant] would have marketed no competing product" and faulted the expert's failure to consider that that non-infringing versions of the product "could readily have been developed." *Id.* at 569-70. The Court further found that the expert's opinion on disgorgement suffered the same "fundamental defect...that OSCAR was essential to the [defendant's] products and that without it, no sales would have been made...the court rejects that assumption." *Id.* Oracle also points to the fact that the court criticized defendant's expert for failing to consider defendant's profits earned from the inclusion of the infringing component, rather than solely calculating the money saved through developing the component through infringement. *Id.* But here, Dr. Leonard's apportionment analysis expressly calculates Android related profits, extensively analyzes the other factors that contribute to those profits, and measures the alleged infringement's contribution to those profits by examining avoided costs, including the costs of developing non-infringing code using Open JDK (as Google has actually done) or training developers.

1 court was correct that mathematical exactness is not required. However, a reasonable and just
2 apportionment of profits is required.”) (citations omitted); *Polar Bear*, 384 F.3d at 712 (same);
3 *Abend*, 863 F.2d at 1480 (same). Although Oracle is right that apportionment must ensure the
4 infringer does not benefit from the infringement, the Ninth Circuit has made equally clear that a
5 valid apportionment also must “avoid the one certainly unjust course of giving the plaintiffs
6 everything, because the defendants cannot with certainty compute their own share.” *Abend*, 863
7 F.2d at 1480. Oracle ignores that this rule goes both ways.

8 Dr. Leonard’s analyses certainly provide the basis of a reasonable and just apportionment
9 for the trier-of-fact to evaluate the contribution to Google’s profits of the allegedly infringing
10 0.02% of Android code, as the Ninth Circuit requires. Oracle is thus left with its argument that
11 any counterfactual analysis or consideration of non-infringing alternatives is improper because of
12 this Court’s prior order striking comments made by Google’s former expert Dr. Alan Cox in an
13 earlier expert report. Dr. Cox had commented (without any quantification) that, because Google
14 had “very close non-infringing substitutes readily at hand” when it developed Android, there were
15 few if any profits attributable to the infringement. ECF 1563-25 (Cox Rpt.2 & 38). In striking Dr.
16 Cox’s opinion, the Court noted that there was no controlling authority on the issue, and
17 commented that “Dr. Cox did not explain how the availability of non-infringing alternatives
18 supposedly decreased the wrongful profits attributable to infringement.” ECF 632 at 6.

19 Here, however, Dr. Leonard has done what Dr. Cox did not, by identifying specific
20 actions Google could have taken rather than using the declarations/SSO and performing a specific
21 quantification of each counterfactual in order to provide alternative measures of the costs avoided
22 by use of, and thus the contribution to profits of, the declarations/SSO of the 37 Java SE APIs.
23 The cases discussed above all consider such evidence and analyses, whether through witness
24 testimony or expert opinion. Google respectfully submits that the Court should not apply the
25 general language from its prior *Daubert* order to strike Leonard’s opinions at issue here. Indeed,
26 Oracle’s position is highly prejudicial, given that its own damages expert relies pervasively on the
27 assertion that the only non-infringing alternative was not developing Android in order to conclude
28 that Oracle should be awarded \$8.8 billion in profits that he admits are caused by factors in the

Android platform in addition to the allegedly infringing declarations/SSO of the 37 Java SE APIs.

Accordingly, none of Dr. Leonard's disgorgement opinions which properly consider counterfactual analyses should be stricken. In particular:

- **Causal nexus.** Dr. Leonard correctly examined whether the \$40.6 billion in revenues claimed by Oracle were caused by the declarations/SSO of the 37 Java APIs, by considering the causal effect of the alleged infringement and Google's "best course of action had it not used the allegedly infringing material." ECF 1563-7 (Leonard Rpt. ¶¶18-23). This but-for analysis—whether certain revenue would have been earned anyway in the absence of infringement—is essential to the causal nexus inquiry.
- **Avoided costs.** After extensively considering the other factors that contribute to Google's profits, Dr. Leonard opines that a reasonable measurement of the contribution of the declarations/SSO to Android profits is to consider how much money Google would have made in various counterfactual scenarios grounded in the factual choices available to Google (licensing the declarations/SSO of the 37 Java SE APIs under the available open source OpenJDK license, paying developers to be trained in another programming language or paying for app development in another language). He measured the costs of those alternatives to arrive at a reasonable apportionment of profits, exactly what Judge Grewal permitted defendant's expert to offer in *Brocade*, 2013 WL 831528 at *6-7. Notably, Oracle does not challenge in this motion the reliability of the analysis, only whether it is legally permissible, which it is.
- **Opportunity cost.** Dr. Leonard's opinion appropriately calculates \$6.5 billion in profits that Google would have recaptured on advertising through non-Android mobile systems, and does not apportion those profits to the alleged infringement. ECF 1563-7 (Leonard Rpt. ¶¶49-51, Ex. 1a.1, Ex. 1a.3 and Ex. 1b). The calculation of the opportunity cost is standard in analyzing profits. *Id.*, n. 71. Moreover, Dr. Kearl agrees with this calculation. ECF 1583-6 (Kearl Rpt. ¶79, n. 113). Oracle misses the point by criticizing this analysis as based on a non-infringing alternative. This has nothing to do with a non-infringing Android. Instead, there is no causal nexus to this revenue (or the revenue is not attributable to Android) because Google would have earned much of it anyway, by using its pre-existing ad and search technology on other platforms such as the iPhone. And Oracle's complaint that the 44% diversion ratio is *ipse dixit* is nonsense; the ratio is derived from the Kim model discussed below, as fully explained in Dr. Leonard's Report. ECF 1563-7 (Leonard Rep. ¶51 (referring to "analysis discussed below" and citing Ex. 1b). Ex. 1b is based upon Ex. 3.d.2, which Leonard explains in his report is derived from the Kim model. *Id.* (Leonard Rpt. ¶¶193-194 and Ex. 3d.2).³

³ Oracle also argues that an unrelated discovery dispute concerning production of third party agreements related to default search on non-Android mobile platforms that was resolved by Google's production of information pursuant to an order by Judge Ryu somehow relates to the diversion ratio. It does not. The diversion ratio is based upon the Kim model, which considers user choices as to which smartphone to purchase and resulting market shares—this analysis has nothing to do with what Google pays its partners. As pointed out in her paper, Dr. Kim "develop[ed] a structural model of consumer demand for both smartphones and their compatible [cont.] apps", and then "recover[ed] the differential impact of an individual app on smartphone

B. Leonard’s “share loss” analysis, based on the market share gain attributable to the alleged infringement under *Oracle*’s theory is based upon sound economic analysis and is not a “NIA” as Oracle claims.

Oracle is wrong to argue that Dr. Leonard’s “share loss” analysis relies on non-infringing alternatives to reduce Google’s Android profits. As noted above, Oracle’s disgorgement theory depends on a theoretical, attenuated causal chain: the declarations/SSO of the 37 Java SE APIs allowed Google to attract Java developers, who then developed more apps, which in turn inspired consumers to buy Android devices, generating more Android revenue. Oracle’s expert cites no evidence that this actually happened; by contrast, Dr. Leonard analyzed the evidence, and concluded that, in fact, app developers follow users, not vice versa. ECF 1563-7 (Leonard Rpt. ¶¶96-172). Nevertheless, in order to provide a ceiling to the apportioned profits attributable to the alleged infringement, Dr. Leonard assumed Oracle’s house of cards had a foundation, and that Google’s use of the declarations/SSO attracted some developers and added some apps to Android. In other words, he met Oracle’s speculative causation theory head-on, assuming that Google (1) could not use the declarations/SSO; and (2) could not try to mitigate the profits it would have lost by using OpenJDK code or paying developers to write the missing applications. Instead, he used an econometric model “to estimate the decrease in Android handset sales that would have occurred in a counterfactual where there were fewer Android apps, as well as the percentage of the Android sales decrease that would have been captured by the iPhone.” *Id.* at ¶¶185-86.

Having not attempted any similar measurement on its own (as Dr. Kearl points out), Oracle complains incorrectly that this analysis is a non-infringing alternative. But the “share loss” analysis assumes that the harm Oracle claims was unavoidable and models its effect on Google’s profits. In labeling this analysis a “non-infringing alternative,” Oracle gives the game away: the only valid non-infringing alternative it believes the trier of fact can consider is the one where

demand.” ECF 1584-12 at 27 (M.J. Kim, Essays on the Economics of the Smartphone and Application Industry). And, Oracle never objected to the scope of information Google provided pursuant to the Ryu Order, so its complaint here and attempt now to impose an evidentiary limitation that was never part of the Order should be rejected on that basis as well. *See* ECF 1436 (setting 2/3/2016 deadline to object to sufficiency of Google production); *see also* ECF 1430 (Oracle proposed order seeking broad evidentiary limitation that Judge Ryu rejected).

Android never existed, and Oracle gets all of Google's unapportioned profits.⁴

Oracle's remaining criticisms do not undermine the reliability of Dr. Leonard's analysis:

- Contrary to Oracle's assertion, Dr. Leonard's reliance on the Kim econometric model fits the facts of the case. Oracle claims that the Kim econometric model should be excluded because it uses an indeterminate range on a curve and so cannot be tested and does not fit the facts of this case. But the Kim model was created to analyze precisely the issue in this case: whether and to what extent the availability of apps drives users to a mobile platform. ECF 1563-7 (Leonard Rpt. ¶¶186-195) & *supra* n.3. Moreover, Dr. Kearl, who is also a trained economist, opines that there is no basis to criticize the theory behind the model, and the model is intuitive, albeit complex. ECF 1583-6 (Kearl Rpt. ¶62 & fn.99).
- Oracle's argument that the model relies upon actual data, and thus data that includes the effect of the infringement, misses the mark. Dr. Leonard applies the model to measure the impact of an actual reduction in apps on Android profits. This inquiry necessarily must consider the apps that in fact generated profits and would have affected the market share of Android handsets and Google's profits. Mullen Decl., Ex. 24 (Leonard Reply to Kearl ¶19).
- Oracle's complaint concerning the sigma coefficient is meritless. The coefficient's value (0.757) is set forth in Dr. Leonard's report at ¶188, n.280 (ECF 1563-7). Dr. Kim's email providing the coefficient was produced when requested and added nothing to the analysis given that the coefficient had already been provided in Dr. Leonard's report.
- Oracle's final argument is a red herring raised to inject unfounded doubts concerning an unrelated discovery dispute resolved by Judge Ryu. *See supra* n.3. Put simply, the Kim model is about user smartphone choice, concerning the effect of apps on what smartphone a user will buy, and has nothing to do with what Google pays to its partners under specific agreements or otherwise. *Id.* Nowhere in the Kim paper is the amount Google pays its partners analyzed or even mentioned.

For the foregoing reasons, Oracle's motion should be denied. Oracle brushes aside reasonable, economically sound analyses of the Android-related profits (if any) that are "attributable to" the alleged infringement, even though the Ninth Circuit has held time and time again that apportionment needs to be "reasonable and just" and must both ensure that the copyright holder is awarded the profits attributable to the infringement, but guard against "the impropriety of awarding [plaintiff] all of [defendant's] profits on a record that reflects beyond argument that most of these profits were attributable to elements other than the infringement."

⁴ As set forth in Google's Motion In Limine No. 6, even under Oracle's theory, Oracle would not be entitled to all profits attributable to Android's platform given that it is clear that the alleged infringing code did not cause all those profits. ECF 1560-17.

1 *Polar Bear*, 384 F.3d at 712 (quoting *Cream Records*, 754 F.2d at 829); *see also Frank Music*,
 2 772 F.2d at 519 (“If the court finds that a reasonable non-speculative formula cannot be derived .
 3 . . then the court should award statutory damages.”).

4 **C. Leonard’s apportionment analyses based upon the lines of infringing code**
 5 **complies with Ninth Circuit law approving apportionment on that basis.**

6 Oracle argues that the Court should exclude both of Dr. Leonard’s apportionment analyses
 7 based upon the percentage of infringing lines of code because Dr. Leonard’s apportionment
 8 “value[s] each and every line of code equally with no attempt to assess relative importance” and
 9 because his approach is somehow contrary to Ninth Circuit law. ECF 1554-4 (Oracle MIL4 at 8).
 10 Oracle mischaracterizes Ninth Circuit law and Dr. Leonard’s apportionment analysis.⁵

11 The Ninth Circuit and other courts uphold apportionment of infringer’s profits based upon
 12 the percentage of infringing material to non-infringing material, provided that the analysis also
 13 takes the relative qualitative value of the infringing material into account. In *Frank Music II*, the
 14 Ninth Circuit upheld the lower court’s apportionment of ten percent of the profits because the
 15 infringing material made up ten percent of defendant’s musical revue, concluding that the
 16 apportionment contained an implicit finding that the infringing material was no more important
 17 than the non-infringing material. *Frank Music Corp. v. MGM, Inc.*, 886 F.2d 1545, 1548 (9th Cir.
 18 1989). Similarly, Oracle relies on *Altai*, which also used the ratio of lines of copied code to
 19 apportion the value of the infringing code to the product, commenting that the qualitative value of
 20 the code must also be taken into account, but rejecting plaintiff’s argument that the infringed code
 21 was the “heart” of the product because “the facts show that [plaintiff’s] emphasis on the
 22 importance of ADAPTER was greatly exaggerated.” 775 F. Supp. at 569-70. Because

23 ⁵ Dr. Leonard offers two different lines of code analyses. The first apportions the profits
 24 attributable to Android, on the one hand, and Google’s search and ad technologies and services,
 25 on the other, and then uses a lines of code apportionment to apportion between the alleged
 26 infringement and the remainder of Android. ECF 1563-7 (Leonard Rpt. ¶198 & Ex. 3d.1). Oracle
 27 did not move to strike the first step in the analysis, the apportionment of \$1.9 billion to the
 28 Android platform. *Id.* This analysis uses both the declarations/SSO and the associated
 implementing code of the 37 Java SE API packages as the numerator to be conservative. *Id.* ¶200.
 The second analysis apportions all of the purported profits based again on the declarations/SSO
 and implementing code of the 37 Java API packages and the total code of Android and Google’s
 primary search and ads code base. *Id.* ¶202.

1 “[a]pproximately 30 percent of the lines of code in OSCAR 3.4 were copied directly from [the
2 infringed work]” the court found “one-third of the value of [infringing component] should be
3 attributed to the infringed portion.” *Id.* at 571-572.

4 Oracle also devotes a full paragraph to misrepresenting the opinion of Judge Grewal in
5 *Brocade*, a case in which Orrick represented the plaintiff. Oracle claims that, “[a]s here, the
6 defendant proposed to apportion based on ‘the ratio between the 145 lines of infringing code and
7 the 10 million lines of code in [plaintiff’s] product’ but Judge Grewal rejected that approach.”
8 ECF 1554-4 (Oracle MIL4 at 8). But this is an out of context quotation from Judge Grewal’s
9 discussion of an entirely different issue – whether defendants’ infringement should be excused as
10 too *de minimis* to be actionable. *See Brocade*, 2013 WL 831528, *7-8. Indeed, the discussion
11 Oracle cites comes under the heading “De Minimis Use.” *Id.*

12 Here, Dr. Leonard’s “lines of code” analysis complies with *Frank Music* by expressly
13 considering the relative importance of the declarations/SSO of the infringing 37 Java SE APIs as
14 compared to the rest of the code in Android, which performs myriads of critical and compelling
15 functions and is undeniably valuable, even according to Oracle’s expert. Rather than address Dr.
16 Leonard’s actual analysis, Oracle blatantly misrepresents his opinion claiming that his
17 apportionment based upon the percentage lines of code “value[s] each and every line of code
18 equally ***with no attempt to assess relative importance.***” ECF 1554-4 (Oracle MIL 4 at 8:8-9)
19 (emphasis added). But the Court need only read the very paragraphs cited by Oracle to see that
20 Dr. Leonard has performed the analysis Oracle claims he omitted. ECF 1563-7 (Leonard
21 Rpt. ¶¶198-199). Dr. Leonard explains that he has “seen no evidence that the programming that
22 went into the allegedly copyrighted material reflects any higher level of ingenuity than the
23 programming that went into the other parts of Android” and refers to evidence that the 37 API
24 packages at issue carry out fundamental or mundane tasks, as do the other API packages
25 developed for Android, that the API libraries are not unique to Java, and that the API packages at
26 issue borrowed from other languages. As his basis for this, he clearly relies on the opinions of
27 Google’s technical expert, Dr. Owen Astrachan, concerning the nature and value of the allegedly
28 infringing declarations/SSO to support his opinion, *id.*, just as Oracle’s damages expert relies on

1 the opinions of Oracle's technical experts. Oracle criticizes Dr. Leonard for providing technical
 2 opinions beyond the purview of an economist, when he has done no such thing.⁶ It is entirely
 3 proper for Dr. Leonard to rely on a technical expert for technical facts and opinions underlying
 4 his damages analysis. ECF 632 at 2.

5 Oracle also argues that Dr. Leonard's conclusion is "refuted by the record" and "willful
 6 blindness does not support a reliable damages analysis." ECF 1554-4 (Oracle MIL4 at 9:7, 9:9-
 7 10). But Oracle, not Dr. Leonard, is being willfully blind. Despite Oracle's litigation-inspired
 8 graphics claiming the declarations/SSO are the supposed "beating heart" of Java, there is ample
 9 evidence that the allegedly infringing code is no more valuable than the other Android or Java SE
 10 code. *E.g.*, ECF 1563-4 (Astrachan Rpt. ¶¶17-18, 119-120, 141, 154, 182-220). Oracle's own
 11 employee expert, Dr. Mark Reinhold, the Chief Architect of Java SE at Sun and Oracle, testified
 12 in deposition that both implementing code and declaring code are equally creative, and equally
 13 important in Java SE. Mullen Decl. , Ex. 23 (Reinhold Dep. at 71:6-14) (Q: As between declaring
 14 code and implementing code, which do you think is more important for developers? ...THE
 15 WITNESS: Neither. Q: Would you characterize them as equally important? A: Yes."). Oracle
 16 may want to deemphasize these facts, but that is no basis to strike Dr. Leonard's analysis that
 17 follows a legally appropriate methodology.⁷

18 **D. Leonard properly calculates TAC costs.**

19 Finally, Oracle attempts to manufacture confusion concerning Dr. Leonard's calculation
 20 of the cost deduction for Google's Traffic Acquisition Costs ("TAC") in order to eliminate \$1.8
 21 billion in costs. TAC is the portion of advertising revenue that Google pays to its partners, such as
 22 websites that host Google ads. Dr. Leonard's calculation of TAC is accurate, reliable, and based

23 ⁶ This is clear on the face of the report, where Dr. Leonard concludes, based on Dr. Astrachan's
 24 analysis, that "[g]iven the lack of evidence that the 37 API packages at issue are unique or reflect
 25 a special level of programming ingenuity, a reasonable approach to the apportionment between
 26 the 37 API packages and the rest of Android can be based on programming effort, which in turn
 27 can be measured by lines of code or number of methods coded." ECF 1563-7 (Leonard Rpt. ¶199).
 Moreover, Dr. Leonard's factual foundation for this opinion is not confined to the cited
 paragraphs from Dr. Astrachan's report, as is evident from his discussion of Android elsewhere in
 his report. *E.g.*, *id.* at ¶¶66-78 (citing extensive technical evidence).

28 ⁷ See *Hangarter v. Provident Life & Acc. Ins. Co.*, 373 F.3d 998, 1017 n.14 (9th Cir. 2004)
 (factual basis of an expert opinion goes to the credibility of the testimony, not the admissibility).

on Google’s advertising P&L reporting aggregate TAC for Google advertising for 2011-15. ECF 1563-7 (Leonard Rpt. ¶¶33); Mullen Decl., Ex. 24 (Leonard Reply to Kearn Rpt. ¶¶6-8). Oracle’s accusation of double-counting arises because Oracle’s expert misinterprets the deposition testimony of Google witness Jonathan Gold, opining that, in addition to including its advertising TAC on its separate Ads P&L statement, Google *also* includes some of its TAC for advertising in the Android P&L statement, concealed in the line items for cost of sales for digital content and applications. ECF 1560-12 (Malackowski Rpt. ¶¶65-72); ECF 1583-6 (Kearn Rpt. ¶27).

Oracle is factually incorrect. As both Leonard and Kearn opined, the TAC for advertisements served on Android devices is included in the Google-wide Adwords TAC line on the Ads P&L—exactly what Dr. Leonard used in his calculation—not included on the Android P&L. ECF 1583-6 (Kearn Rpt. ¶¶27-28) (commenting that “it would appear that Mr. Malackowski may have been mistaken.”); ECF 1563-7 (Leonard Rpt. ¶33 and Ex. 1d); Mullen Decl., Ex. 24 (Leonard Reply to Kearn ¶¶6-8). Thus, there was no double-counting. But Oracle seeks to sow further confusion by claiming that Google has not maintained adequate records of TAC, despite the fact that the aggregate TAC is reported on Google’s advertising P&L, produced in this case and relied upon by all experts. Malackowski. ECF 1563-7 (Leonard Rpt. ¶33 & Ex. 1d); ECF 1560-13 (Malackowski Rebuttal ¶70-72); ECF 1583-6 (Kearn Rpt. ¶27 & Ex. 1). The only supposed “uncertainty” Oracle points to is its own expert’s attempt to make mischief with innuendo of accounting shenanigans.⁸ Mr. Gold will testify at trial in order to provide the factual foundation for Dr. Leonard’s opinion concerning the TAC deduction and the P&Ls; thus, there is no basis to strike his opinion on this issue. *See Therasense, Inc. v. Becton, Dickinson & Co.*, No. C 04-02123 WHA, 2008 WL 2323856 at *2 (N.D. Cal. May 22, 2008) (Alsup, J.) (“The traditional and correct way to proceed is for a foundational witness to testify first-hand at trial to the foundational fact . . . and to be cross-examined. Then the expert can offer his or her opinion on the assumption that the foundational fact is accepted by the jury.”). Oracle’s motion to exclude the testimony and opinions of Dr. Leonard should be denied.

⁸ Oracle refers to Google’s burden to show its costs, but a motion in limine is not a motion for summary judgment. ECF 1488. Oracle does not challenge the reliability of Leonard’s methodology other than its incorrect assertion that he double counted TAC. *See also supra* n.3.

1 Dated: April 6, 2016

KEKER & VAN NEST LLP

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3 By: /s/ Robert A. Van Nest
ROBERT A. VAN NEST
4 CHRISTA M. ANDERSON
DANIEL PURCELL

5 Attorneys for Defendant
6 GOOGLE INC.
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